Editorial

Flu and pulmonary fibrosis

The flu has been able to hit headlines all over the world on many occasions over last few years. Flu viruses pose a continuous threat to the public health and drug resistant strains are the real cause of concern.[1,2]

Indian scenario is not different from the rest of the world. In fact, the situation is even worse in our country. We, in India, have been observing two peaks in cases one in winter and other just after the monsoon season. The epicenter of flu, perhaps, has shifted for South to North India as a substantial number of cases were reported from North India this year contributing to substantial morbidity and even mortality. Is the Indian climate favorable for the change in recent pattern of flu in India? In the USA, most of the surges in cases are observed only in October and December months.[3]

Overcrowding, poor sanitation and lack of awareness and misconceptions about the disease possibly lead to the perpetuation of the infectious agent in our society. Many patients with mild to moderate disease prefer to seek less systematic medical care and rely on over-the-counter flu remedies. Breathlessness may be taken as an exacerbation of common respiratory diseases like asthma or chronic obstructive pulmonary disease. Hence, many patients are unlikely to be tested for influenza and hospitalized appropriately. Even after timely hospitalization, flu leads to significant morbidity and mortality. A recent literature review has revealed that if a person is hospitalized with laboratory-confirmed influenza, he or she has chances of intensive care unit admission of about 12-30% and of death of about 3-15%.[4]

Possibly the lack of adequate diagnosis, late presentations and inappropriate treatment are prevalent in many regions of our country and some other parts of the world. Therefore, under such circumstances, initial presentations with long-term sequelae, without a clue to the infection, are likely to be common. In our publication 'pulmonary sequelae in a patient recovered from swine flu', we tried to drive attention of the readers towards a long-term sequel of flu.[5] Symptomatic pulmonary fibrosis with a usual interstitial pneumonia pattern on high resolution computerized tomography and histopathology was seen in our case 2 years after the influenza infection. Patient was otherwise healthy adult and did not suffer from any of the comorbidities known to be associated with influenza infection. Cryptogenic organizing pneumonia associated with influenza is generally thought to be self-resolving in nature but may require corticosteroid to hasten the recovery.

A multitude of factors have been implicated as a risk factor for the development of pulmonary fibrosis. Gene expression profiling of idiopathic pulmonary fibrosis (IPF) is different than the other similar interstitial lung diseases such as hypersensitivity pneumonitis.[6] Agriculture/farming, livestock, wood dust, textile dust, mold, metal dust, stone/sand/silica, wood fires, and smoking have been linked to the development of pulmonary fibrosis.[7] Aging and a number of viruses such as hepatitis C virus, TT virus, adenovirus, human cytomegalovirus, Epstein–Barr virus, and gammaherpesviruses have been studied as a link in the pathogenesis of IPF.[8]

H5N1-infected mice have been shown to have developed typical IPF during the recovery period.[9] Various mechanisms also have been proposed in the past to explain the occurrence of fibrosis after influenza infection. Cytokines and chemokines act as important pathogenetic factors for development of lung fibrosis.[10,11] According to some studies, granulocyte-macrophage colony-stimulating factor, interleukins and transforming growth factor-beta 1 are supposed to be important mediators for development of pulmonary granulation tissue and fibrosis.[12]

Viral-associated bacterial super infections are also responsible for enhancement of the effect on induction of long-term sequelae such as pulmonary fibrosis.[13]

IPF is a relentlessly progressive disease with invariably fatal outcome. No particular treatment has been found to be effective in halting the progression of the disease. Therefore, a diligent search into the factors responsible for the development of disease is essential so that its overall detrimental effect on health of people could be reduced. We are thankful to readers of Lung India for showing interest on a topic of immense public health importance.[14,15]

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